The Butler

# Plan

Design a robot that can identify empty seats in an area and direct the student to that seat.

## Steps

* Design camera program to map area and identify empty seats
  + Map area to label seats and path
  + Build program to find empty seats and occupied seats
  + Ping nearest occupied seat from start position
* Build a robot that will lead the person to the seat in the mapped area
  + Map out designated area with distance to each seat
  + Wait in certain area for location from the other

## Camera Task

* Detect and label all available seats
* Detect when seat is empty
* When button pressed
* Send nearest empty seat to buggy via RF

## Buggy Task

* Create RF between raspberry pi 5 and Arduino
* Send a number to Arduino so it knows where to move
* Design basic buggy to move forward, backwards, left and right, 180 and detect collisions
* Reset back to base position after every task (extra to chain empty seats if multiple people)